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| 10/750,693      | 01/02/2004  | Dan M. Manole        | TEC1223-01          | 4112             |

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| EXAMINER |
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JIANG, CHEN WEN

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| ART UNIT | PAPER NUMBER |
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3744

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,693

Applicant(s)

MANOLE, DAN M.

Examiner

Chen-Wen Jiang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9, 17-24 and 26-30 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 10 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 1,2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beebe et al. (U.S. Patent Number 6,148,635) in view of Vukovic et al. (U.S. Patent Number 6,393,853) or Cannell et al. (U.S. Patent Number 6,729,383).

In regard to claims 1 and 3, Beebe et al. disclose a compact active vapor compression cycle heat transfer device. Referring to Fig.2, the device comprises a compressor 14, a condenser 10, an expansion device 24 and an evaporator 17. The evaporator 17 and condenser 10 are heat exchangers formed from a plurality of microchannels 52. Heating is also available from the device of the device, since one side of the device will expel heat into an adjacent atmosphere, fluid or object while another side of the device will absorb heat from an adjacent atmosphere, fluid or object. However, Beebe et al. do not disclose attachment of the module to the body.

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Vukovic et al. and Cannell et al. disclose attachment feature between the module and the body in the same field of endeavor for the purpose of mounting. Examiner disagrees with Applicant's remarks about the prior art of Vukovic et al and Cannell et al. Vukovic et al. disclose the module and cold plate are attached in the operating position as described in col. 2, lines 5-19. Applicant's remark in col.2, lines 19-23 shows the released positions. In the prior art of Cannell et al., the cold plate 59 is attached to module 48 when the whole system is considered. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Beebe et al. with attachment feature in view of Vukovic et al. and Cannell et al. so as to mount the module and contact the surfaces.

In regard to claim 2, upon a close review of applicant's specification, it appears that the claimed attachment do not have any criticality and/or lead to any new and unexpected results. Applicant does not specify the deficiencies of other attachments used in the prior art. Therefore, it would have been obvious to one of ordinary skill in the art to have selected the claimed attachment feature since these particular attachment that are no better or provided improved performance over that which is commonplace in the prior art

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beebe et al. and Vukovic et al. or Cannell et al. as applied to claim 1 above, and further in view of Monfarad (U.S. Patent Number 6,687,122).

Beebe et al. and Vukovic et al. or Cannell et al. disclose the invention substantially as claimed. Beebe discloses a flexible planar compressor. However, Beebe et al. and Vukovic et al. or Cannell et al. do not disclose hermetically sealed compressor. Monfarad discloses a hermetically sealed compressor in the same field of endeavor for the purpose of compress

refrigerant. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Beebe et al. and Vukovic et al. or Cannell et al. with a hermetically sealed compressor in view of Monfarad so as to compress refrigerant.

4. Claims 10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beebe et al. (U.S. Patent Number 6,148,635) in view of Cannell et al. (U.S. Patent Number 6,729,383) and Monfarad (U.S. Patent Number 6,687,122).

In regard to claims 10, Beebe et al. disclose a compact active vapor compression cycle heat transfer device. Referring to Fig.2, the device comprises a compressor 14, a condenser 10, an expansion device 24 and an evaporator 17. The evaporator 17 and condenser 10 are heat exchangers formed from a plurality of microchannels 52. Heating is also available from the device of the device, since one side of the device will expel heat into an adjacent atmosphere, fluid or object while another side of the device will absorb heat from an adjacent atmosphere, fluid or object. Monfarad discloses a hermetically sealed compressor in the same field of endeavor for the purpose of compress refrigerant. Cannell et al. disclose frame attachment feature between the module and the body in the same field of endeavor for the purpose of mounting. Examiner disagrees with Applicant's argument about the validity of central located compressor in Monfarad's teaching. Monfarad discloses the size and design of prior art cooling system often required the major components cooling system be centrally located (col.2, lines 19-22). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Beebe et al. with attachment feature in view of Vukovic et al. and a hermetically sealed compressor in view of Monfarad.

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In regard to claim 13, Monfarad discloses an optional receiver in the refrigeration system.

In regard to claims 14-16, Examiner takes official notice that the cold plate with fluid inlet and outlet and convective heat transfer surface with fin and matching areas are well known in the prior art.

***Allowable Subject Matter***

5. Claims 7-9,17-23,24 and 26-30 are allowed.
6. Claims 4,5,11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809.

The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen-Wen Jiang  
Primary Examiner

A handwritten signature in black ink, consisting of a series of loops and a horizontal line at the end, representing the name Chen-Wen Jiang.